

SPECIFICATION

WAREHAM WHARF DEMOLITION AND REMOVAL

WAREHAM, NL

SCH Project No.: 722593

ISSUED FOR TENDER




PREPARED FOR

Fisheries and Oceans Canada

DATE

December 20, 2018

PROVINCE OF NEWFOUNDLAND AND LABRADOR	
	PERMIT HOLDER
	This Permit Allows
DMG CONSULTING LIMITED	
To practice Professional Engineering in Newfoundland and Labrador.	
Permit No. as issued by PEGNL <u>N0588</u>	
which is valid for the year <u>2018</u>	
MIRC No. as issued by PEGNL _____	

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CIVIL

- C1 - LOCATION PLAN.
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1.1 Scope

- .1 The work consists of the furnishing of all plant, labour, equipment and material for wharf demolition and removal at Wareham, NL in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract.

1.2 Description of Work

- .1 In general, work under this contract consist of but will not necessarily be limited to the following:
 - .1 Demolition and removal of the existing infrastructure, as noted on the drawings.
 - .2 Minor site work and restoration.
 - .3 Installation of new shoreline protection, class "A", topsoil, and sods, as indicated on the construction drawings.

1.3 Site Of Work

- .1 Work will be carried out at Wareham, NL, in the location as shown on the accompanying drawings.

1.4 Datum

- .1 Datum used for this project is Lowest Normal Tides (LNT). Location and elevation of adjacent control points are shown on the location drawing "C1". All soundings and elevations are in meters. All elevations are referenced to PWC 2-2018 Elev. 3.195m.
- .2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting work.

1.5 Familiarization With Site

- .1 Before submitting a bid, bidders can visit the site and its surroundings, at their own expense to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid or costs to do the work. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 28 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.

1.6 Codes And Standards

- .1 Perform work in accordance with the latest edition of the National Building Code of Canada, FCC Standard 373 - Standard for Piers and Wharves (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/373/pageOO.shtml), and any other code of provincial or local application including all amendments up to project bid closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.7 Term Engineer

- .1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative as defined in the General Conditions of the Contract.

1.8 Setting Out Work

- .1 N/A.

1.9 Cost Breakdown

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price.
- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.
- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.
- .4 All work items not designated in the unit price table as a measurement for payment, are to be included in the lump sum arrangement, as noted on the Bid and Acceptance Form.

1.10 Work Schedule

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time, if applicable. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.
- .4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 Abbreviations

- .1 Following abbreviations of standard specifications have been used in this specification and on the drawings:

CGSB - Canadian Government Specifications Board
CSA - Canadian Standards Association
NLGA - National Lumber Grades Authority
ASTM American Society for Testing and Materials
- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.12 Quarry and Explosives

- .1 N/A

1.13 Site Operations

- .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day-to-day operations in progress at site. All arrangements for space and access will be made by Contractor.
- .2 Remove snow and ice as required to maintain safe access in a manner that does not damage existing structures or interfere with the operations of others.

1.14 Project Meetings

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
- .3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.
- .4 Have a responsible member of firm present at all project meetings.

1.15 Protection

- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .2 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.

1.16 Existing Services

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to site operations, pedestrian, vehicular traffic and tenant operations.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide adequate bridging over trenches which cross walkways or roads to permit normal traffic.

1.17 Documents Required

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Reviewed Shop Drawings
 - .5 List of outstanding shop drawings
 - .6 Change Orders
 - .7 Other modifications to Contract
 - .8 Field Test Reports
 - .9 Copy of Approved Work Schedule
 - .10 Site specific Health and Safety Plan and other safety related documents

1.18 Permits

1. Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.
 2. Provide appropriate notifications of project to municipal and provincial inspection authorities .
 3. Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work .
 4. Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
 5. Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.
 6. Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.
- .11 Other documents as specified.

1.19 Cutting, Fitting And Patching

- .1 Execute cutting, including excavation, fitting and patching required to make work fit properly.
- .2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .3 Do not cut, bore, or sleeve load-bearing members .
- .4 When required, make cuts with clean, true, smooth edges.

1.20 Existing Sub- Surface Conditions

- .1 Information pertaining to the existing sub-surface conditions may be available by contacting the Departmental Representative.
- .2 Contractors are cautioned that any previous investigations that may be available for review, were intended to provide general site information only. Any interpolation and/or assumptions made relative to any previous investigations is the Contractor's responsibility.

1.21 Location Of Equipment

- .3 N/A

1.22 Fish Habitat

- .1 This work is being conducted in an area where fish habitat may be affected. Perform work to conform with rules and regulations governing fish habitat and in accordance with authorization for work or undertakings affecting fish habitat .
- .2 Contact the local Department of Fisheries and Oceans detachment at least 48 hours in advance of starting any work on site. Submit confirmation to the Departmental Representative that DFO have been contacted.

1.23 Notice To Shipping/Mariners

- .1 Notify the Marine Communications and Traffic Services' Centre, of Fisheries and Oceans Canada, at (709) 772-2083, ten (10) days prior to commencement and upon completion of the work, in order to allow for the issuance of Notices to Shipping/Mariners.
- .2 During construction any vessels or barges utilized must be marked in accordance with the provisions of the Canada Shipping Act Collision Regulations.

1.24 Acceptance

- .1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative, make a check of all work. Correct all discrepancies before final inspection and acceptance.

1.25 Works Coordination

- .1 Contractor is responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.

- .3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work, Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.26 Contractor's Use Of Site

- .1 Construction operations, including storage of materials and equipment for this contract, not to interfere with the private or municipal activity in this location in Wareham.
- .2 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative .
- .3 Contractor will take adequate precautions to protect existing concrete decks and asphalt when operating tracked equipment .
- .4 Exercise care so as not to obstruct or damage public or private property in the area .
- .5 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

1.27 Work Commencement

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan and insurance documentation, unless otherwise agreed by Departmental Representative.
- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.
- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.

1.28 Facility Smoking Environment

- .1 Comply with smoking restrictions.

1.29 Interpretation Of Documents

- .1 Supplementary to the Order of Precedence article of the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

1.30 Working Adjacent To Community Roads

- .1 The Contractor will be responsible to restore any damage to existing roadways.

Part 1 General

1.1 SECTION INCLUDES

- .1 Inspection and testing by inspecting firms or testing laboratories designated by Department Representative.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative are specified under various sections.

1.3 APPOINTMENT AND PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory except as follows:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Mill tests and certificates of compliance.
 - .4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
 - .5 Additional tests specified as follows:
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

1.4 CONTRACTOR'S RESPONSIBILITIES

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to work for inspection and testing.
 - .2 Facilitate inspections and tests.
 - .3 Make good work disturbed by inspection and test.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Unless otherwise specified, this section outlines the requirements and procedures for the contractor' submission of shop drawings, product data, samples, mock-ups, certificates, bonds and other pertinent pre-construction/construction documentation to the Departmental Representative for review.

1.2 GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent work areas are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals, or PDF electronic copies. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.
- .11 Make changes or revisions to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .12 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit shop drawings bearing stamp and signature of qualified professional registered or licensed in Province of Newfoundland and Labrador, Canada.
- .3 Where applicable indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work.
- .4 Allow 7 days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.

- .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit 3 prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit 3 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit 3 copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
- .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Delete information not applicable to project.
- .15 Supplement standard information to provide details applicable to project.

- .16 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .17 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Letter of Good Standing, WHSCC.
- .2 Submit transcription of insurance's immediately after award of Contract.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 **GENERAL**

1.1 **REFERENCES**

- .1 Code and standards referenced in this section refer to the latest edition thereof.
- .2 Canadian Standards Association (CSA)
 - .1 FCC No. 301 Standard for Construction Operations.
- .3 Transportation of Dangerous Goods Act Regulations.
- .4 Newfoundland Occupational Health and Safety Act, Amended
- .5 Consolidated Newfoundland and Regulations 1149 WMIS Regulations Under the Occupational Health and Safety Act
- .6 Consolidated Newfoundland and Regulations 1165 Occupational Health and Safety Regulations under the Occupational Health and Safety Act.
- .7 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .8 National Building Code of Canada.

1.2 **RELATED SECTIONS**

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 35 43 - Environmental Procedures

1.3 **SUBMITTALS**

- .1 Submit to Departmental Representative copies of the following document within 7 days after date of notice to proceed, including updates:
 - .1 Site Specific Health and Safety Plan.
 - .2 On Site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .3 Reports or directions issued by Federal and Provincial inspectors or other Authority having jurisdiction.
 - .4 Accident or Incident Reports.
 - .5 MSDS data sheets.
 - .6 Name of Contractor's Representative(s) designated to perform full time health and safety supervision on site.
 - .7 Letter of Good Standing/Certificate of Clearance from the Provincial Worker's Compensation Board.

- .2 Medical Surveillance: Obtain and maintain worker medical surveillance documentation for work posing a potential hazard to workers as stipulated in Federal or Provincial Occupational Health and Safety Regulations. Upon request, submit copy of documentation to Departmental Representative.
- .3 Upon request by Departmental Representative, submit reports and other documentation as stipulated to be produced and maintained by Federal and Provincial Occupational Health and Safety Regulations and as specified herein.
- .4 Submit above documents in accordance with the submittal procedures specified in Section 01 33 00 – Submittal Procedures.
- .5 Acceptance of the Project Health and Safety Risk Assessment and Management Plan and other submitted documents by the Departmental Representative shall only be viewed as acknowledgement that the contractor has submitted the required documentation under this specification section.
- .6 The Departmental Representative makes no representation and provides no warranty for the accuracy, completeness and legislative compliance of the Project Health and Safety Risk Management Plan and other submitted documents by this acceptance.
- .7 Responsibility for errors and omissions in the Project Health and Safety risk Assessment and Management Plan and other submitted documents is not relieved by acceptance by the Departmental Representative.

1.4 OCCUPATIONAL HEALTH AND SAFETY (PROJECT HEALTH AND SAFETY RISK ASSESSMENT AND MANAGEMENT PLANS)

- .1 Conduct operations in accordance with latest edition of the Newfoundland Occupational Health and Safety (OH&S) Act and Regulations.
- .2 Prepare a detailed Project Health and Safety Risk Assessment and Management Plan for the Departmental Representative. Assessment shall identify, evaluate and control job specific hazards and the necessary control measures to be implemented for managing hazards.
- .3 Provide a copy of the Project Health and Safety Risk Assessment and Management Plan to the Departmental Representative.
- .4 The written Health and Safety Risk Assessment and Management Plan shall incorporate the following:
 - .1 A site-specific health and safety plan, refer to clause 1.5 Site-Specific Health and Safety Risk Assessment and Management Plan of this section for requirements.
 - .2 An organizational structure which shall establish the specific chain of command and specify the overall responsibilities of contractors employees at the work site.
 - .3 A comprehensive workplan which shall:

- .1 define work tasks and objectives of site activities/operations and the logistics and resources required to reach these tasks and objectives
- .2 establish personnel requirements for implementing the plan, and
- .3 establish site specific training and notification requirements and schedules as required.
- .4 A personal protected equipment (PPE) Program which shall detail PPE:
 - .1 Selection criteria based on site hazards.
 - .2 Use, maintenance, inspection and storage requirements and procedures.
 - .3 Decontamination and disposal procedures.
 - .4 Inspection procedures prior to during and after use, and other appropriate medical considerations.
 - .5 Limitations during temperature extremes, heat stress and other appropriate medical consideration.
- .5 An emergency response procedure, refer to Clause 1.6 Supervision and Emergency Response Procedure of this section for requirements.
- .6 A hazard communication program for informing workers, visitors and individuals outside of the work area as required.
- .7 A health and safety training program.
- .8 General safety rules.
- .5 Periodically review and modify as required each component of the Project Health and Safety Risk Assessment and Management Plan when a new hazard is identified during completion of work and when an error or omission is identified in any part of the Project Health and Safety Risk Assessment and Management Plan.
- .6 Implement all requirements of the Project Health and Safety Risk Assessment and Management Plan.
 - .1 Ensure that every person entering the project site is informed of requirements under the Project Health and Safety Risk Assessment and Management Plan.
 - .2 Take all necessary measures to immediately implement any engineering controls, administrative controls, personal protective equipment required or termination of work procedures to ensure compliance with the Project Health and Safety Risk Assessment and Management Plan.

1.5 SITE SPECIFIC HEALTH AND SAFETY PLAN

- .1 Develop written site-specific Project Health and Safety Plan, based on hazard assessments, prior to commencement of work.
 - .1 Submit copy to Departmental Representative with seven (7) calendar days of acceptance of bid.
 - .2 Submit updates as work progresses.
- .2 Health and Safety Plan shall contain three (3) parts with following information:

- .1 Part 1 – Hazards: List of individual health risks and safety hazards identified by hazard assessment process.
- .2 Part 2 – Safety Measures: Engineering controls, personal protective equipment and safe work practices used to mitigate hazards and risks listed in Part 1 of Plan.
- .3 Part 3a: Emergency Response – Standard operating procedures, evacuation measures and emergency response in the occurrence of an accident, incident or emergency.
 - .1 Include response to all hazards listed in Part 1 of Plan.
 - .2 Evacuation measures to complement the Facility’s existing Emergency Response and Evacuation Plan. Obtain pertinent information from Departmental Representative.
 - .3 List names and telephone numbers of officials to contact including:
 - .1 General Contractor and all Sub-Contractors.
 - .2 Federal and Provincial Departments as stipulated by laws and regulations of authorities having jurisdiction and local emergency resource organizations, as needed based on nature of emergency.
 - .4 Part 3b: Site Communications:
 - .1 Procedures used on site to share work related safety issues between workers, subcontractors, and General Contractor.
 - .2 List of critical tasks and work activities, to be communicated with the Facility Manager, which has risk of affecting tenant operations, or endangering health and safety of Facility personnel and the general public. Develop list in consultation with the Departmental Representative.
- .3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

Column 1	Column 2	Column 3
Part 1 Identified Hazard	Part 2 Safety Measures	Part 3a/3b Emergency Response & Site Communications

- .4 Develop Plan in collaboration with subcontractors. Address work activities of all trades. Revise and update Plan as sub-contractors arrive on site.
- .5 Implement and enforce compliance with requirements of plan for full duration of work to final completion and demobilization from site.
- .6 As work progresses, review and update Plan. Address additional health risks and safety hazards identified by on-going hazard assessments.

- .7 Post copy of Plan and updates, on site.
- .8 Submission of the Health and Safety Plan and updates, to the Departmental Representative, is for review and information purposes only. Departmental Representative's receipt, review and any comments made of the Plan shall not be construed to imply approval in part, or in whole, of such Plan by Departmental Representative, and shall not be interpreted as a warranty of being complete and accurate, or as a confirmation that all health and safety requirements of the Work have been addressed, and that it is legislative compliant. Furthermore, Departmental Representative's review of the Plan shall not relieve the Contractor of any of his legal obligations for Occupational Health and Safety provisions specified as part of the Work and those required by provincial legislation or those which would otherwise be applicable to the site of the work.

1.6 SUPERVISION AND EMERGENCY RESCUE PROCEDURE

- .1 Carry out work under the direct supervision of competent persons responsible for safety by ensuring the work complies with the appropriate section of OH&S Act and Regulations
- .2 Assign a sufficient number of supervisory personnel to the work site.
- .3 Provide a suitable means of communications for workers required to work alone.
- .4 Develop an emergency rescue plan for the job site and ensure that supervisors and workers are trained in the emergency rescue plan.
- .5 The emergency response plan shall address, as a minimum:
 - .1 Pre-emergency planning.
 - .2 Personnel roles, lines of authority and communication.
 - .3 Emergency recognition and prevention.
 - .4 Safe distances and places of refuge.
 - .5 Site security and control
 - .6 Evacuation routes and procedures
 - .7 Decontamination procedures which are not covered by the site specific safety and health plan.
 - .8 Emergency medical treatment and first aid.
 - .9 Emergency alarm, notification and response procedures including procedures for reporting incidents to local, provincial and federal government departments.
 - .10 PPE and emergency equipment.
 - .11 Procedures for handling emergency incidents.
 - .12 Site specific emergency response training requirements and schedules.
- .6 The emergency response procedures shall be rehearsed regularly as part of the overall training program.

- .7 Provide adequate first aid facilities for the jobsite and ensure that a minimum number of workers are trained in first aid in accordance with the First Aid Regulations.

1.7 CONTRACTORS SAFETY OFFICER

- .1 The contractor's Safety Officer will be solely responsible for the implementation and monitoring of the Project Health and Safety Risk Assessment and Management Plan, and will have the authority to implement health and safety changes as directed by the Departmental Representative. The Safety Officer shall have as a minimum:
 - .1 Completed training in hazardous occurrence management and response/protocols.
 - .2 Completed training in First Aid.
 - .3 Have working knowledge of occupational safety and health regulations.
 - .4 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .5 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .6 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.8 HEALTH AND SAFETY COMMITTEE

- .1 Establish an Occupational Health and Safety Committee where ten or more workers are employed on the job site as per the OH&S Act and Regulations.
- .3 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .4 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.9 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.10 UNFORSEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise the Departmental Representative verbally and in writing.

1.11 PROJECT SITE CONDITIONS

- .1 The following are known or potential project related safety hazards at site:
 - .1 Working on and near water.
 - .2 Inclement Weather.
 - .3 Heavy equipment activity in the area.
 - .4 Overhead and underground power/utility lines.
 - .5 Heavy Lifting.
 - .6 Cutting tools and other construction/power tools.
 - .7 Vehicular/pedestrian traffic.
- .2 Above lists shall not be construed as being complete and inclusive of potential health and safety hazards encountered during work. Include above items into hazard assessment process.

1.12 INSTRUCTION AND TRAINING

- .1 Workers shall not participate in or supervise any activity on the work site until they have been trained to a level required by this job function and responsibility. Training shall as a minimum thoroughly cover the following:
 - .1 Federal and Provincial Health and Safety Legislation requirements including roles and responsibilities of workers and person(s) responsible for implementing, monitoring and enforcing health and safety requirements.
 - .2 Limitations, use, maintenance and care of engineering controls and equipment.
 - .3 Limitations and use of emergency notifications and response equipment including emergency response protocol.
 - .4 Work practices and procedures to minimize the risk of an accident and hazardous occurrence from exposure to a hazard.
- .2 Provide and maintain training of workers, as required, by Federal and Provincial legislation.
- .3 Provide copies of all training certificates to the Departmental Representative for review, before a worker is to enter the work site.

- .4 Authorized visitors shall not access the work site until they have been:
 - .1 Notified of the names of persons responsible for implementing, monitoring and enforcing the health and Safety Risk Assessment and Management Plan.
 - .2 Briefed on safety and health hazards present on the site.
 - .3 Instructed in the proper use and limitations of personal protective equipment.
 - .4 Briefed as the emergency response protocol including notification and evacuation process.
 - .5 Informed of practices and procedures to minimize risks from hazards and applicable to activities performed by visitors.

1.13 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements to be obeyed by all persons granted access.
 - .1 Wear personal protective equipment (PPE) appropriate to function and task on site: the minimum requirements being hard hat, safety footwear and eye protection and for work on or near water, a personal flotation device.
 - .2 Immediately report unsafe activity or condition at site, near miss accident, injury and damage.
 - .3 Maintain site in tidy condition.
 - .4 Obey warning signs and safety tags.
- .2 Brief workers on site safety rules, and on the disciplinary measures to be taken by Departmental Representative for violation or non-compliance of such rules. Post rules on site.
- .3 The following actions or conduct by Contractor, workers and sub-contractors will be considered as non-conformance with the health and safety requirements of the contract for which a Non-Compliance Notification will be issued to the General Contractor by the Departmental Representative.
 - .1 Failure to follow the minimum site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
 - .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.
 - .4 Falsification of information in Worker's Compensation Reports, safety reports and other health and safety related documents submitted to Departmental Representative or to Authority having jurisdiction.
 - .5 Possession of firearms on site.
 - .6 Possession of non-prescriptive illegal drugs or alcohol.
 - .7 Action, or lack thereof, resulting in the issuance of Warnings, Fines, or Stop Work Orders from a Provincial Authority having jurisdiction.
 - .8 Violation of other specified health and safety rules and requirements as determined by Departmental Representative.

- .4 See elsewhere in this section for details on Non-Compliance Notifications and resulting disciplinary measures.

1.14 CONSTRUCTION SAFETY MEASURES

- .1 Observe construction safety measures of National Building Code, latest edition, Provincial Government, OH&S Act and Regulations, Workplace Health and Safety and Compensation Commission and Municipal Authority provided that in any case of conflict or discrepancy more stringent requirements shall apply.
- .2 Administer the project in a manner that will ensure, at all times, full compliance with Federal and Provincial Acts, regulations and applicable safety codes and the site Health and Safety Risk Assessment and Management Plan.
- .3 Provide Departmental Representative with copies of all orders, directions and any other documentation, issued by the Provincial Department of Government Services, Occupational Health and Safety branch immediately after receipt.

1.15 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Federal, Province and authority having jurisdiction, and in consultation with the Departmental Representative.

1.16 HEALTH AND SAFETY MONITORING

- .1 Periodic inspections of the contractor's work may be carried out by the Departmental Representative to maintain compliance with the Health and Safety Program. Inspections will include visual inspections as well as testing and sampling as required.
- .2 The contractor shall be responsible for any and all costs associated with delays as a result of contractor's failure to comply with the requirements outlined in this section.

1.17 NOTIFICATION

- .1 The contractor shall, prior to the commencement of work, notify in writing the Work Place Health and Safety Division, Department of Labour with the following information:
- .1 Name and location of construction site.
 - .2 Company name and mailing address of contractor doing the work.
 - .3 The number of workers to be employed.
 - .4 A copy of the Health and Safety Risk Assessment and Management Plan if requested.

1.18 NON-COMPLIANCE AND DISCIPLINARY MEASURES

- .1 Immediately address and correct health and safety violations and non-compliance issues.

- .2 Negligence or failure to follow occupational health and safety provisions specified in the Contract Documents and those of applicable laws and regulations could result in disciplinary measures taken by the Departmental Representative against the General Contractor.
- .3 A system of Non-Compliance Notifications and Disciplinary Measures on projects is detailed as follows:
 - .1 A non-compliance notification is issued to the General Contractor, by the Departmental Representative, whenever there is a violation or non-compliance of the project's health and safety requirements and of those of Provincial and Federal regulations by any worker, sub-contractor or other person to whom the Contractor has granted access to the work site.
 - .2 Non-compliance notifications are progressive in nature resulting in disciplinary measures imposed depending on the frequency, nature and severity of the infraction.
 - .3 Disciplinary measures could include:
 - .1 Removal of the offending person or party from site;
 - .2 Financial penalties in the form of progress payment reduction or holdback assessments made against the contract; and
 - .3 Taking the Work Out of Contractor's Hands in accordance with the General Conditions.
- .4 Departmental Representative will make final decision as to what constitutes a violation and when to issue a Non-compliance Notification.
- .5 Non-compliance Notifications issued by Departmental Representative shall not be construed as to overrule or disregard warnings, orders and fines levied against Contractor by a regulatory agency having jurisdiction.
- .6 Each non-compliance notification issued is given a numerical rating based on a three (3) level numbering system. Each level is progressive in nature to reflect:
 - .1 The seriousness of the infraction as viewed by the Departmental Representative.
 - .2 The degree of disciplinary action which will be taken by the Departmental Representative.
- .7 Numerical ratings are as follows:
 - .1 Non-compliance Notification-Level No. 1 Rating:
 - .1 Situation: occurrence of a first time infraction by a person or party on site.
 - .2 Action: verbal warning to General Contractor, documented in Departmental files and copy sent to the General Contractor

- .2 Non-compliance Notification-Level No. 2 Rating:
 - .1 Situation:
 - .1 The second occurrence of a previous infraction by the same person or party on site; or
 - .2 Accumulation of several level-1 notifications for different infractions by the same person or party on site; or
 - .3 Non-action on the part of the Contractor or sub-contractor to rectify non-compliance infractions previously identified in one or several level-1 notifications; or
 - .4 Violation or non-observance of a Federal or Provincial Safety Law or Regulation by sub-contractor or Contractor; or
 - .5 Negligence by a person or party resulting in injury or major property damage.
 - .2 Action: written notice to General Contractor complete with an order for immediate remedial action to be taken. Depending on the severity of the offense, the order may include request for the immediate removal of the offending person or party from site.
- .3 Non-compliance Notification-Level No. 3 Rating:
 - .1 Situation:
 - .1 Continued and repeated non-compliance with health and safety requirements by the General Contractor or by sub-contractor(s); or
 - .2 The occurrence of a serious accident on site resulting in serious bodily injury or death.
 - .2 Action:
 - .1 Formal letter issued to General Contractor with an order to “Immediately Stop Work” until so notified to proceed.
 - .2 Review of all non-compliance and/or accident occurrences in the project with possible investigation by the Departmental Representative.
 - .3 Based on outcome of the review/investigation, work could be suspended or taken out of the Contractor’s hands in accordance with the General Conditions.
 - .3 The term “serious accident” used herein shall have the same meaning as defined in the Canadian Dictionary of Safety Terms – 1987 issue from the Canadian Society of Safety Engineers (C.S.S.E.).
- .8 Decision on which rating level to be placed on any given Non-Compliance Notification will be determined solely by Departmental Representative.

- .9 Further details on the disciplinary system will be provided at the pre-construction Health and Safety meeting after contract award.
- .10 Be responsible to fully brief workers and sub-contractors on the operation and importance of this system.

1.19 WHMIS

- .1 Ensure that all controlled products are in accordance with the Workplace Hazardous Materials Information System (WHMIS) Regulations and Chemical Substances of the OH&S Act and Regulations regarding use, handling, labelling, storage, and disposal of hazardous materials.
- .2 Deliver copies of relevant Material Safety Data Sheets (MSDS) to job site and the Departmental Representative. The MSDS must be acceptable to Labour Canada and Health and Welfare Canada for all controlled products that will be used in the performance of this work.
- .3 Train workers required to use or work in close proximity to controlled products as per OH&S Act and Regulations.
- .4 Label controlled products at jobsite as per OH&S and Regulations.
- .5 Provide appropriate emergency facilities as specified in the MSDS where workers might be exposed to contact with chemicals, e.g. eye-wash facilities, emergency shower.
 - .1 Workers to be trained in use of such emergency equipment.
- .6 Contractor shall provide appropriate personal protective equipment as specified in the MSDS where workers are required to use controlled products.
 - .1 Properly fit workers for personal protective equipment
 - .2 Train workers in care, use and maintenance of personal protective equipment.
- .7 No controlled products are to be brought on-site without prior approved MSDS.
- .8 The MSDS are to remain on site at all times.

1.20 OVERLOADING

- .1 Ensure no part of work or associated equipment is subjected to loading that will endanger its safety or will cause permanent deformation.

1.21 PERSONAL PROTECTIVE EQUIPMENT

- .1 Ensure workers on the jobsite use personal protective equipment appropriate to the hazards identified in the Risk Assessment and Management Plan and those workers are trained in the proper care, use, and maintenance of such equipment.

- .2 PPE selections shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, task-specific conditions, duration and hazards and potential hazards identified on site.
- .3 Provide all workers and up to five (5) visitors to the site with proper hearing protection. Workers and visitors shall not be exposed to noise levels greater than 85 dB (A) over an eight hour shift without proper hearing protection.
- .4 Provide all workers and up to five (5) visitors to the site with CSA approved eye protection sufficient to act as a protective barrier between the eye and airborne contaminants, hazardous materials and physical hazard.
- .5 Provide workers and up to five (5) visitors to the site with CSA approved hard hats.

1.22 EXCAVATION SAFETY

- .1 N/A

1.23 CONFINED SPACE WORK

- .1 N/A

1.24 HAZARDOUS MATERIALS

- .1 Should material resembling hazardous materials (asbestos/mould) be encountered during the execution of work and notify the Departmental Representative. Do not proceed until written instructions have been received from the Departmental Representative.
- .2 Unless otherwise noted, for hazardous materials abatement and repair, employ the services of a recognized Environmental Consultant to provide all air monitoring and testing services for regulatory requirements.

1.25 HEAVY EQUIPMENT

- .1 Ensure mobile equipment used on jobsite is of the type specified in OH&S Act and Regulations fitted with a Roll Over Protective (ROP) Structure.
- .2 Provide certificate of training in Power Line Hazards for operators of heavy equipment.
- .3 Obtain written clearance from the power utility where equipment is used in close proximity to (within 5.5 metres) overhead or underground power lines.

- .4 Equip cranes with:
 - .1 A mechanism which will effectively prevent the hook assembly from running into the top boom pulley.
 - .2 A legible load chart.
 - .3 A maintenance log book.

1.26 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations of Work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Section 02 41 16 – Structure Demolition

1.2 DEFINITIONS

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released to the environment.
- .2 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .3 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3 FIRES

- .1 Fires and burning of rubbish on site not permitted.

1.4 DISPOSAL OF WASTES AND HAZARDOUS MATERIALS

- .1 Do not bury rubbish and waste materials on site. Dispose of materials at approved landfill sites. Use Norris Arm and/or and Robin Hood Bay for the disposal of creosote materials.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable Federal and Provincial laws, regulations, codes and guidelines. Use Norris Arm and/or and Robin Hood Bay for the disposal of creosote materials. All other demolition waste is required to go to an approved waste disposal facility.
- .4 Dispose of construction waste materials including creosote treated timbers and demolition debris, resulting from work, an approved waste disposal facility. Carry out such disposal in strict accordance with Provincial and Municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills. The cost for removal and disposal all waste material to be included in the lump sum price for Section 02 41 16 – Structure Demolition.
- .5 Establish methods and undertake construction practices which will minimize waste and optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into various waste categories

in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) in a “mixed state”. Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

- .6 Communicate with landfill operator prior to commencement of work, to determine what specific construction, demolition and renovation waste materials have been banned from disposal at the landfill and at transfer stations.

1.5 DRAINAGE

- .1 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .3 Provide control devices such as filter fabrics, sediment traps and other necessary means to control drainage and run-off. Maintain in good order for the duration of the project.

1.6 WORK ADJACENT TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not dump excavated fill, waste material or debris in waterways.
- .3 Maintain equipment in good order with no fluid leaks.

1.7 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .4 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.
- .5 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.
- .6 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Department Representative within 24 hours of occurrence.
- .7 Provide a floating debris containment boom whenever any of the Contractors methods of work allow for the potential of floating debris.

1.8 NOTIFICATION

- .1 Departmental Representative will notify Contractor in writing of observed non compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 43 – Environmental Procedures
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.2 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIAL DISCOVERY

- .1 With the exception of creosote treated timber, there is little risk of discovering hazardous materials on this project such as asbestos, PCB's, etc. When hazardous materials are discovered, stop work immediately and notify the Departmental Representative.
- .2 Refer to Section 01 35 43 – 1.4.4 and Section 01 74 21 – 1.8.1 for creosote treated timber disposal.

1.4 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 29 83 – Payment Procedures for Laboratory Services.
- .2 Section 01 33 00 – Submittal Procedures.
- .3 Section 01 78 00 – Closeout Submittals.

1.2 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such Work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.3 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by DFO.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for re-testing and re-inspection.

1.4 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work.
- .2 Co-operate to facilitate such inspections and tests.

- .3 Make good work disturbed by inspectors and tests.

1.5 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative sufficiently in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.7 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.

1.8 MILL TESTS

- .1 Submit mill test certificates and other certificates as specified in various sections.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

- .1 Construction aids.
- .2 Office and sheds.
- .3 Traffic.

1.2 Related Sections

- .1 Section 01 35 28 – Health and Safety Requirements
- .2 Section 01 56 00 - Temporary Barriers and Enclosures.

1.3 Installation And Removal

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.4 Scaffolding

- .1 N/A

1.5 Hoisting

- .1 Hoists cranes, if required, shall be operated by certified operator.

1.6 Site Storage/Loading

- .1 Confine work and operations of employees. Do not unreasonably encumber premises.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.7 Protection And Maintenance Of Traffic

- .1 Where applicable, maintain and protect traffic on affected roads during construction period.
- .2 Protect travelling public from damage to person and property.
- .3 Provide and maintain adequate access to project site.

- .4 Contractor's traffic for hauling material to and from site to interfere as little as possible with public traffic and contractor to inform and comply with local municipal regulations.
- .5 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads.

1.8 Contractor's Site Offices

- .1 Provide office heated to 22 °C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table, fax machine, telephone, file cabinet and chair.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors may provide their own offices as necessary. Direct location of these offices.

1.9 Temporary Power and Light

- .1 Provide and pay for temporary power during constructing for temporary lighting, heating, site construction trailers and operating of power tools in accordance with governing regulations and the Canadian Electrical Code, latest edition.
- .2 Arrange for connection with Utility company. Pay all costs for installation, maintenance and removal of cables, distribution and branch panel boards, poles, lighting, heating and general power receptacles as required.
- .3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.

1.10 Equipment, Tool And Materials Storage

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.11 Sanitary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.12 Water Supply

- .1 Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal.

1.13 Clean-Up

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

-
- Part 1 General**
- 1.1 RELATED SECTIONS**
- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- 1.2 SECTION INCLUDES**
- .1 Barriers.
- 1.3 INSTALLATION AND REMOVAL**
- .1 Provide temporary controls in order to execute Work safely and expeditiously.
.2 Remove from site all such work after use.
- 1.4 HOARDING**
- .1 Erect temporary site enclosure using new 1.2M high snow fence wired to rolled steel “T” bar fence posts spaced at 2.4 meters.
- 1.5 GUARD RAILS AND BARRICADES**
- .1 Provide secure, rigid guard rails and barricades around deep excavations, open edges of deck , etc.
.2 Provide as required by governing Authorities.
- 1.6 ACCESS TO SITE**
- .1 Provide and maintain access to adjacent facilities.
- 1.7 FIRE ROUTES**
- .1 Maintain access to property.
- 1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**
- .1 Protect surrounding private and public property from damage during performance of Work.
.2 Be responsible for damage incurred.
- 1.9 WASTE MANAGEMENT AND DISPOSAL**
- .1 Separate waste materials for reuse and recycling. Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

END OF SECTION

Part 1 General

1.1 DESCRIPTION

- .1 This section specifies requirements for board, lodgings and related services to be provided by the Contractor for the Inspector.

- .2 Due to the location of this site, it is a requirement of this contract that the Contractor provide and pay for all board and lodgings for the Inspector's sole use for the duration of the project. Provide for and maintain acceptable living accommodations on site for the Inspector's sole use. The minimum requirement would be a self-contained unit with private sleeping accommodation and shower or bath or other arrangement approved by the Inspector. Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.

1.2 BOARD AND LODGINGS

- .1 For the purpose of this contract board and lodgings shall include but not necessarily be limited to: sleeping accommodation, meals and dining facilities, washroom facilities, laundry facilities, electrical and heating service, linens and bedding, etc. and any reasonable service as directed by the Inspector.

- .2 Board and lodgings must be approved by the Inspector and the Contractor will cooperate in providing all services required to maintain an acceptable standard of living during construction period.

- .3 The Contractor shall include all calendar days, including weekends and statutory holidays in determining the cost. Provide equipment required for executing inspection and testing by appointed agencies.

1.3 REQUIREMENTS OF REGULATORY AGENICES

- .1 Comply with any or all applicable Agencies regulation of the Province of Newfoundland and Labrador, relating to the setup, servicing and maintenance of accommodations for the Inspector.

- .2 Obtain and pay for any permits which may be required and comply to regulations of same.

END OF SECTION

Part 1 General

1.1 GENERAL

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply;
 - .1 name and address of manufacturer;
 - .2 trade name, model and catalogue number;
 - .3 performance, descriptive and test data;
 - .4 manufacturer's installation or application instructions;
 - .5 evidence of arrangements to procure.
 - .6 evidence of manufacturer delivery problems or unforeseen delays.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations except where required for operating instructions, or when located in mechanical or electrical rooms.

1.2 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.

1.3 MANUFACTURERS INSTRUCTIONS

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods to be used. Do not rely on labels or enclosure provided with products. Obtain written instructions directly from manufacturers.

- .2 Notify Departmental Representative in writing of any conflict between these specifications and manufacturers instructions, so that Departmental Representative will designate which document is to be followed.

1.4 AVAILABILITY

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.5 STORAGE, HANDLING AND PROTECTION

- .1 Deliver, handle and store products in manner to prevent damage, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.6 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Where applicable, transportation cost of products supplied by Owner will be paid for by Departmental Representative. Unload, handle and store such products.

1.7 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in the specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.

1.8 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.9 CO-ORDINATION

- .1 Ensure coordination of Work. Maintain efficient and continuous supervision.

1.10 CONCEALMENT

- .1 N/A

1.11 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

1.12 FASTENINGS

- .1 N/A

1.13 PROTECTION OF WORK IN PROGRESS

- .1 Prevent overloading of parts of structures. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.14 EXISTING UTILITIES

- .1 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Section 02 41 16 – Structure Demolition

1.2 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6 Dispose of waste materials and debris at designated approved dumping areas. For creosote treated timber, refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal and Section 02 41 16 – Structure Demolition.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Provide adequate ventilation during use of volatile or noxious substances.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces.

1.3 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris including that caused by Owner or other Contractors.

- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .8 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .9 Remove dirt and other disfiguration from exterior surfaces.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Dispose of construction waste materials including creosote treated timbers and demolition debris, resulting from work, at approved landfill sites only. Carry out such disposal in strict accordance with Provincial and Municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills. Use Norris Arm and/or Robin Hood Bay for the disposal of creosote material.

1.5 MEASUREMENT FOR PAYMENT

- .1 No measurement will be made under this section.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 35 43 – Environment Procedures.
- .2 Section 02 41 16 – Structure Demolition.

1.2 WASTE MANAGEMENT PLAN

- .1 Prior to commencement of work, prepare Waste Management Workplan.
- .2 Workplan to include:
 - .1 Waste audit.
 - .2 Waste reduction practices.
 - .3 Material source separation process.
 - .4 Procedures for sending recyclables to recycling facilities.
 - .5 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
 - .6 Training and supervising workforce on waste management at site.
- .3 Workplan to incorporate waste management requirements specified herein and in other sections of the Specifications.
- .4 Where applicable, develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.
- .5 Implement and manage all aspects of Waste Management Workplan for duration of work.
- .6 Revise Plan as work progresses addressing new opportunities for diversion of waste from landfill.

1.3 WASTE AUDIT

- .1 At project startup, conduct waste audit of:
 - .1 Site conditions identifying salvageable and non-salvageable items and waste resulting from demolition and removal work.
 - .2 Develop written list. Record type, composition and quantity of various salvageable items and waste anticipated, reasons for waste generation and operational factors which contribute to waste.

1.4 WASTE REDUCTION

- .1 Based on waste audit, develop waste reduction program.
- .2 Structure program to prioritize actions, with waste reduction as first priority, followed by salvage and recycling effort, then disposal as solid waste.
- .3 Identify materials and equipment to be:
 - .1 Protected and turned over to Departmental Representative when indicated.
 - .2 Salvaged by Contractor.
 - .3 Sent to recycling facility.
 - .4 Sent to waste processing/landfill site for their recycling effort.
 - .5 Disposed of in approved landfill site.
- .4 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials.

1.5 MATERIAL SOURCE SEPARATION PROCESS

- .1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.
- .2 Provide on-site facilities to collect, handle and store anticipated quantities of reusable, salvageable and recyclable materials.
 - .1 Use suitable containers for individual collection of items based on intended purpose.
 - .2 Locate to facilitate deposit but without hindering daily operations.
 - .3 Clearly mark containers and stockpiles as to purpose and use.
- .3 Perform demolition and removal of existing structure components following a systematic deconstruction process.
 - .1 Separate materials and equipment at source carefully dismantling, labelling and stockpiling alike items for the following purposes:
 - .1 Salvaging reusable items not needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.
 - .2 Sending as many items as possible to locally available recycling facility.
 - .3 Segregating remaining waste and debris into various individual waste categories for disposal in a “non-mixed state” as recommended by waste processing/landfill sites.
- .4 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.

1.6 WORKER TRAINING AND SUPERVISION

- .1 Provide adequate training to workforce to emphasize purpose and worker responsibilities in carrying out the Waste Management Plan.

- .2 Waste Management Coordinator: designate full-time person on site, experienced in waste management and having knowledge of the purpose and content of Waste Management Plan to:
 - .1 Oversee and supervise waste management during work.
 - .2 Provide instructions and directions to all workers and subcontractors on waste reduction, source separation and disposal practices.
- .3 Post a copy of Plan in a prominent location on site for review by workers.

1.7 CERTIFICATION OF MATERIAL DIVERSION

- .1 Submit to Departmental Representative, copies of certified weigh bills from authorized waste processing sites and sale receipts from recycling/reuse facilities confirming receipt of building materials and quantity of waste diverted from landfill.
- .2 Submit data at pre-determined project milestones as determined by Departmental Representative.
- .3 Compare actual quantities diverted from landfill with projections made during waste audit.

1.8 DISPOSAL REQUIREMENTS

- .1 Burning of rubbish and waste materials is prohibited. Dispose of construction waste materials including creosote treated timbers and demolition debris, resulting from work, at approved landfill sites only. Carry out such disposal in strict accordance with Provincial and Municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills. Use Norris Arm and/or Robin Hood Bay for the disposal of creosote material.
- .2 Disposal of waste, volatile materials, mineral spirits, oil, paint, paint thinner or unused preservative material into waterways, storm, or sanitary sewers is prohibited.
- .3 Do not dispose of preservative treated wood through incineration.
- .4 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .5 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.
- .6 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.
- .7 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.
- .8 Transport waste intended for landfill in separated condition, following rules and recommendations of Landfill Operator in support of their effort to divert, recycle and reduce amount of solid waste placed in landfill.

- .9 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.
- .10 Sale of salvaged items by Contractor to other parties not permitted on site.
- .11 Approved landfill: CNWM Waste Management Facility in Indian Bay, Norris Arm, or Robin Hood Bay.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 78 00 – Closeout Submittals.
- .2 Section 01 74 11 - Cleaning

1.2 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: Contractor and Subcontractors to conduct inspection of Work, identify deficiencies and defects, and repair as required conforming to Contract Documents. As part of that inspection, the Contractor shall provide to the Departmental Representative a dive survey/video upon completion of the work.
 - .1 Notify the Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor is to correct work accordingly.
- .3 Completion: submit written certificate that following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for final inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise.
- .7 Final Payment: when Departmental Representative considers final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.
- .8 Payment of Holdback: after issuance of certificate of Substantial Performance of Work, submit an application for payment of holdback amount in accordance with Contract Documents.

1.3 CLEANING

- .1 In accordance with Section 01 74 11 - Cleaning.
- .2 Remove waste and surplus materials, rubbish and construction facilities from the site.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .3 Section 02 41 16 – Structure Demolition

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Furnish evidence, if requested, for type, source and quality of products provided.
- .3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .4 Pay costs of transportation.

1.3 PROJECT RECORD DOCUMENTS

- .1 Departmental Representative will provide two white-print sets of contract drawings and two copies of specifications manual specifically for “as-built” purposes.
- .2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative at any time during construction.
- .4 As-Built Drawings:
 - .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped “As-Built Drawings” and be signed and dated by Contractor.
 - .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
 - .3 Record the following information:

- .1 Horizontal and vertical location of various elements in relation to Benchmark #001 Datum.
 - .2 Field changes of dimension and detail.
 - .3 All design elevations, sections and details dimensioned and marked-up to consistently report finished installation conditions.
 - .4 Any details produced in the course of the contract by Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.
 - .5 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.
- .5 As-Built Specifications: legibly mark in red each item to record actual construction, including:
- .1 Manufacturer, trade name and catalogue number of each product actually installed, particularly items substituted from that specified.
 - .2 Changes made by Addenda and Change Orders.
 - .3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.
- .6 Maintain as-built documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Frequency of reviews will be subject to Departmental Representative's discretion. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

1.4 AS-BUILTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.

- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.5 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish slab datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.6 FINAL SURVEY

- .1 Submit final site survey certificate certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

1.7 WARRANTIES AND BONDS

- .1 Warranty management plan to include required actions and documents to assure that Owner receives warranties to which it is entitled.
- .2 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

- .3 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .4 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .5 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .6 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone numbers of manufacturers or suppliers.
 - .5 Names, addresses and telephone numbers of sources of spare parts.
 - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .7 Cross-reference to warranty certificates as applicable.
 - .8 Starting point and duration of warranty period.
 - .9 Summary of maintenance procedures required to continue warranty in force.
 - .10 Organization, names and phone numbers of persons to call for warranty service.
- .7 Respond in a timely manner to oral or written notification of required construction warranty repair work.

END OF SECTION

Part 1

General

1.1 SECTION INCLUDES

- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Section 01 35 28 - Health and Safety Requirements

1.2 SECTION INCLUDES

- .1 This section specifies the requirements for demolition and removal of the various items designated as such under this contract. The work generally consists of:
 - .1 Demolition and removal of untreated round native-timber ballasted cribwork, and untreated dimension timber including the deck beams, decking, coping wheelguard, and wheelguard blocking. The existing fender system is round native timber. Contractor responsible for determining appropriate waste disposal site and paying for all fees and costs associated with the disposal. Carry out such disposal in strict accordance with all applicable Provincial and Municipal laws and regulations. Separate out and prevent improper disposal of items banned from landfills.

1.3 GENERAL REQUIREMENTS

- .1 A Notice to Shipping is to be issued prior to commencement and upon completion of work.
- .2 During construction, any vessels or barges utilized must be marked in accordance with the provisions of the Canada Shipping Act Collision Regulations.
- .3 Upon completion of the project, a written Notice to Mariners must be issued.

1.4 REFERENCES

- .1 Canadian Standards Association (CSA International), latest edition
 - .1 CSA S350, Code of Practice for Safety in Demolition of Structures.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

1.6 MEASUREMENT FOR PAYMENT

- .1 Demolition and removal of timber cribs and spans to be paid as lump sum price for demolition.
- .2 Demolition and removal of coping, wheelguard, ladder uprights and fendering to be included in lump sum price for demolition.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 PROTECTION

- .1 Do work in accordance with Section 01 35 28 - Health and Safety Requirements.
- .2 Prevent movement, settlement, or damage to adjacent structures and utilities to remain in place.
- .3 Protect all existing objects to remain. In the event of damage, immediately replace or make repairs to approval of Departmental Representative. Contractor to ensure protection of all objects designated to remain.
- .4 Protect adjacent building systems, services and equipment.
- .5 Provide supports and other protection as required.

3.2 DEMOLITION SALVAGE AND DISPOSAL

- .1 All demolished materials, except materials designated to be reused, will become property of Contractor and will be removed from site and disposed of to satisfaction of Departmental Representative. It is the sole responsibility of the Contractor to dispose of all demolished materials to an approved disposal site. Ensure that the disposal site is approved and willing to accommodate any material disposed from the work site. Use Norris Arm and/or Robin Hood Bay for the disposal of creosote material, and to provide all weigh bills/ tipping slips to Departmental Representative to serve as proof that disposal requirements have been adhered to.

3.3 RESTORATION

- .1 Upon completion of work, remove debris, trim surfaces and leave work site in clean condition.
- .2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 32 11 23 – Aggregate Base Courses.

1.2 References

- .1 American Society for Testing and Materials (ASTM International).
- .2 ASTM D4791, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.3 Source Quality Control

- .1 Source of materials to be incorporated into work or stockpiles requires approval.
- .2 Inform Owner's Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.
- .3 If, in opinion of Owner's Representative, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.
- .4 Should a change of material source be proposed, advise Owner's Representative 4 weeks in advance of proposed change to allow sampling and testing.
- .5 Acceptance of material at source does not preclude future rejection if it is subsequently found to lack uniformity, or if its field performance is found to be satisfactory.

1.4 Samples

- .1 Aggregate will be subject to continual sampling by Owner's Representative during production.
- .2 Provide Owner's Representative with access to source and processed material for sampling and testing.
- .3 Bear the cost of sampling and testing of aggregates which fail to meet specified requirements.

PART 2 PRODUCTS

2.1 Materials

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.
- .2 Flat and elongated particles of coarse aggregate: to ASTM D4791.
 - .1 Greatest dimension to exceed five times least dimension.
- .3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
 - .1 Natural sand.
 - .2 Manufactured sand.
 - .3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.
- .4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
 - .1 Crushed rock or slag.
 - .2 Gravel and crushed gravel composed of naturally formed particles of stone.

PART 3 EXECUTION

3.1 Topsoil Stripping

- .1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected.
- .2 Commence topsoil stripping of areas as indicated after area has been cleared and waste material removed from site.
- .3 Strip topsoil to depths as indicated. Avoid mixing topsoil with subsoil.
- .4 Stockpile in locations as directed by Owner's Representative. Stockpile height not to exceed 2.0 m.

3.2 Development Of Aggregate Source

- .1 Contractor to produce aggregates off site.
- .2 Contractor to develop aggregate source to prevent contamination of aggregates stockpiled.

3.3 Processing

- .1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.
- .2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particle shapes, as specified. Use methods and equipment approved by Owner's Representative.

3.4 Handling

- .1 Handle and transport aggregates to avoid segregation, contamination and degradation.

3.5 Stockpiling

- .1 Stockpile aggregates on site in locations as indicated unless directed otherwise by Owner's Representative.
- .2 Stockpile aggregates in sufficient quantities to meet Project schedules.
- .3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
- .4 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Owner's Representative within 48 h of rejection.
- .5 Stockpile materials in uniform layers of thickness as follows:
 - .1 Max 1.0 m for coarse aggregate and base course materials.
 - .2 Max 2.0 m for fine aggregate and sub-base materials.
 - .3 Max 1.5 m for other materials.
- .6 Complete each layer over entire stockpile area before beginning next layer.
- .7 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.
- .8 Do not cone piles or spill material over edges of piles.
- .9 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.6 Cleaning

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.

- .2 Leave any unused aggregates in neat compact stockpiles as directed by Owner's Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Section 01 29 83 - Payment Procedures for Testing Laboratory Services
- .3 Sections 01 45 00 - Quality Control
- .4 Section 02 41 16 – Structure Demolition
- .5 Section 32 11 23 – Aggregate Base Courses

1.2 SECTION INCLUDES

- .1 This section specifies the requirements for:
 - .1 Excavation and backfilling for site work and site grading.

1.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM D698-07e1, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.

1.4 EXISTING CONDITIONS

- .1 Examine all drawings and specifications to ascertain the extent of the work. Visit the site to ascertain special conditions which might affect the work of this section.

1.5 PROTECTION

- .1 Protect existing landscaping, natural features, bench marks, adjacent buildings, surface or underground utility lines which are to remain as directed by Departmental Representative. If damaged, restore to original or better condition unless directed otherwise.
- .2 Maintain adjacent roads to prevent accumulation of construction related debris on roads.

1.6 MEASUREMENT FOR PAYMENT

- .1 Rock and gravel backfill including supply, placement and compaction to be included in the lump sum for all upland remediation.

Part 2 Products

2.1 MATERIALS

- .1 Backfill material: Type 3 with gradation to be within limits specified when tested to ASTM C136 (latest edition) and ASTM C117 (latest edition). Sieve sizes to CAN/CGSB-8.1 (latest edition).

<u>Sieve Designation</u>	<u>%</u>
Passing 200 mm	100
150 mm	80-100
80 mm	55-95
30 mm	25-65
5 mm	5-25
1 mm	0-10
0.08	mm 0-5

- .2 Excavated or graded material existing on site may be suitable to use as fill for grading work if approved by Departmental Representative.

2.2 STOCKPILING

- .1 Stockpile granular backfill material in manner to prevent segregation. Protect stockpiled fill material from freezing.

Part 3 Execution

3.1 GRADING

- .1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated.
- .2 Compact filled and disturbed areas to 95% corrected maximum dry density to ASTM D698.

3.2 TESTING

- .1 Costs of tests will be paid by Departmental Representative. Refer to Sections 01 29 83 - Payment Procedures for Testing Laboratory Services and 01 45 00 - Quality Control.

3.3 BACKFILLING

- .1 Do not commence backfilling until areas of work to be backfilled have been inspected and approved by Departmental Representative.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Place fill materials in 300 mm lifts and compact to 95% corrected maximum dry density.

3.4 SURPLUS MATERIAL

- .1 Remove surplus material and material unsuitable for fill, grading or landscaping as directed by Departmental Representative.

END OF SECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- .1 This section specifies requirements for supply and installation of a floating containment boom which is to:
 - .1 Enclose the work area and prevent any floating debris from leaving the immediate area of construction.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

1.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM), latest edition.
 - .1 ASTM D 4491-99a, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - .2 ASTM D 4595, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - .3 ASTM D 4716, Standard Test Method for Determining the (In-Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.
 - .4 ASTM D 4751, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
 - .5 ASTM A123/A123M, zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 Canadian General Standards Board (CGSB), latest edition.
 - .1 CAN/CGSB-4.2, Textile Test Methods.
 - .2 CAN/CGSB-148.1, Methods of Testing Geotextiles and Geomembranes.
 - .1 No. 2-M85, Mass per Unit Area.
 - .2 No. 3-M85, Thickness of Geotextiles.
 - .3 No. 7.392, Grab Tensile Test for Geotextiles.
 - .4 No.6.1-93, Bursting Strength of Geotextiles Under No Compressive Load.
- .3 Canadian Standards Association (CSA), latest edition.

- .1 CAN/CSA-G40.20-04/G40.21, General Requirements for Rolled or Welded Structural Quality Steel.

1.4 MEASUREMENT FOR PAYMENT

- .1 No measurement for payment will be made under this section. Include costs in lump sum and/or fixed price items.

1.5 SUBMITTALS

- .1 Provide shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

1.6 REGULATORY REQUIREMENTS

- .1 Follow all environmental procedures in completing the Work.
- .2 Comply with municipal, provincial and national codes and regulations relating to project.

1.7 DELIVERY AND STORAGE

- .1 During delivery and storage, protect materials from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris and rodents.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and packaging material, in appropriate on-site bins, for recycling in accordance with Waste Management Plan.
- .4 Contaminated sediments must be disposed of as required by Authorities having jurisdiction.

1.9 INTERFERENCE TO NAVIGATION

- .1 Be familiar with vessel movements and fishery activities in area affected by construction activities. Plan and execute work in a manner that will not interfere with fishing operations, marine operations and construction activities at wharf site, or access to the wharves by land or water.
- .2 Departmental Representative will not be responsible for loss of time, equipment, material or any other cost related to interference with moored vessels in harbour.
- .3 Keep the Marine Communications and Traffic Services' Centre, Fisheries and Oceans Canada, informed of during construction activities in order that necessary Notices to Mariners will be issued.

PART 2 – PRODUCTS

2.1 MATERIALS

- .1 Floating boom:
 - .1 Closed cell polyethylene floatation log enclosed in a UV stabilized reinforced polyvinyl chloride pocket.
 - .2 Floating boom to be easily identifiable as an obstruction to mariners.

PART 3 – EXECUTION

3.1 GENERAL

- .1 The floating containment boom shall be installed at the commencement of activities. No work shall be carried out in any area unless the floating containment boom is in place and performing to the satisfaction of the Departmental Representative.
- .2 The floating boom shall be maintained and kept in place by the Contractor until all work has been completed, or until the Departmental Representative advises that it can be removed.
- .3 The Contractor shall comply with the requirements of all permits regarding floating containment booms.
- .4 On completion of the work, the Contractor shall remove the floating containment boom and dispose of off-site as required.

- .5 The contractor shall install yellow buoys to clearly mark the position of the floating containment boom. A minimum of five yellow buoys shall be required to mark the floating boom. The Contractor shall be required to maintain these buoys on the floating boom until the work has been completed and has been removed from the site of work.
- .6 The floating containment boom shall be anchored in place to resist all forces due to wind, wave, current, ice, etc... If the boom is damaged or breaks away from its mooring and the work area is exposed to the waterway, then the Contractor shall be required to install temporary flashing yellow lights until the containment boom is repositioned to enclose the work area, and construction shall cease until the containment boom is completely restored. Also, if the containment boom does not perform to the satisfaction of Environment Canada, the Departmental Representative or any other body having jurisdiction, the Contractor shall suspend operations until all issues have been restored satisfactorily.

3.2 CLEANING

- .1 Remove construction debris from Project site and dispose of debris in an environmentally responsible and legal manner.

END OF SECTION

Part 1 General

1.1 MEASUREMENT FOR PAYMENT CLASS “A” & CLASS “B”

- .1 Granular sub-base and base materials to be paid in cubic metres place measured (CMPM) to the limits shown on the drawings. Include as incidental any cost associated with scarifying, reshaping and compaction to achieve finished grades as noted on the drawings.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM), latest edition
 - .1 ASTM C117, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C131, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .3 ASTM C136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .4 ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft³) (600kN-m/m³).
 - .5 ASTM D1557, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft³) (2,700kN-m/m³).
 - .6 ASTM D1883, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
 - .7 ASTM D4318, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB), latest edition
 - .1 CAN/CGSB-8.1, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2, Sieves, Testing, Woven Wire, Metric.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.

Part 2 Products

2.1 MATERIALS

- .1 Granular base: material in accordance with the following requirements:
 - .1 Crushed stone or gravel.
 - .2 Aggregate quality: Sound, hard, durable material free from soft, thin elongated or laminated particles, organic material, or other substances that would act in deleterious manner for use intended.
 - .3 Flat and elongated particles of coarse aggregate: to ASTM D 4791.
 - .4 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1.

Class "A" Granular Base

Sieve Designation	% Passing
19 mm	100
9.51 mm	55-80
4.75 mm	35-60
1.20 mm	17-35
0.300 mm	7-20
0.075 mm	3-6 (pit source)
0.075 mm	3-8 (rock source)

- .1 Liquid limit: to ASTM D4318, maximum 25
- .2 Plasticity index: to ASTM D4318, maximum 0
- .3 Los Angeles degradation: to ASTM C131. Max. % loss by weight: 35
- .4 Crushed particles: at least 50% of particles by mass retained on the 4.75mm sieve to have at least 1 freshly fractured face.
- .5 Soaked CBR: to ASTM D1883, min 100, when compacted to 100% of AASHTO T180-74.

Part 3 Execution

3.1 SEQUENCE OF OPERATION

- .1 Place granular base after sub-base surface is inspected and approved by Departmental Representative.
- .2 Placing
 - .1 Construct granular base to depth and grade in areas indicated.
 - .2 Ensure no frozen material is placed.
 - .3 Place material only on clean unfrozen surface, free from snow and ice.
 - .4 Begin spreading base material on crown line or on high side of one-way slope.
 - .5 Place material using methods which do not lead to segregation or degradation of aggregate.
 - .6 Place material to full width in uniform layers not exceeding 150 mm compacted thickness.
 - .7 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
 - .8 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .3 Compaction Equipment
 - .1 Compaction equipment to be capable of obtaining required material densities.
 - .2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Departmental Representative before use.

- .3 Equipped with device that records hours of actual work, not motor running hours.
- .4 Compacting
 - .1 Compact to density not less than 98% corrected maximum dry density in accordance with ASTM D698.
 - .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
 - .3 Apply water as necessary during compacting to obtain specified density.
 - .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Departmental Representative.
 - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.2 SITE TOLERANCES

- .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

3.3 PROTECTION

- .1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Departmental Representative.

END OF SECTION